FR. Conceicao Rodrigues College Of Engineering

Father Agnel Ashram, Bandstand, Bandra-west, Mumbai-50

Department of Computer Engineering

B.E. (Computer) (semester VI)

(2018-2019)

Course Outcomes & Assessment Plan

Subject: Enterprise Resource Planning(CSDLO6023) **Credits - 4**

Syllabus:

1. **Introduction to Enterprise Resource Planning (ERP)**

   Information System and Its Components, Value Chain Framework,Organizational Functional Units, Evolution of ERP Systems, Role ofERP in Organization, Three-Tier Architecture of ERP system.

2. **ERP and Implementation**
   ERP implementation and strategy, Implementation Life cycle, Pre-implementationtask, requirement definition, implementation Methodology

3. **ERP Business Modules**

   3.1. Finance, manufacturing, human resources, quality management, material management, marketing, Sales distribution and service.
   3.2. Case study on Supply Chain management (SCM), Customer ,relationship Management (CRM)

4. **Introduction to ERP related Technologies**
   4.1. Business Process Re-engineering (BPR),Data warehousing,DataMining, On- line Analytical Processing(OLAP), Product Life CycleManagement (PLM))
   4.2. Geographical Information Management, RFID, QR Code,Bar, Coding, E-commerce and their application in Enterprise planning

5. **Extended ERP and security issues**
   5.1. Enterprise application Integration (EAI), open source ERP, cloud ERP
   5.2. Managing ERP Securities: Types of ERP security Issues, System Access security, Data Security and related technology for managing data security

6. **Cases of ERP for Enterprises.**
   6.1. Cases of ERP like MySAP for Business suite implementation at ITC,ERP for Nestle GLOBE Project, Oracle ERP Implementation at Maruti Suzuki
   6.2. Need of ERP for Small and Medium size enterprises.(Zaveri)

Text Books:

1. Alexis Leon, ERP Demystified: II Edition, Tata McGraw Hill.
2. Rajesh Ray, Enterprise Resource Planning, Text and cases, Tata McGraw Hill.
3. Sandeep Desai, Abhishek Srivastava, ERP to E_2 ERP: A Case study approach, PHI.
4. JyotindraZaveri, Enterprise Resource Planning, Himalaya Publishing House, 2012.

Reference Books:

1. V.K. Garg& N.K. Venkatakrishnan, Enterprise Resource Planning: concepts & practices, by ; PHI.
2. Supply Chain Management Theories & Practices: R. P. Mohanty, S. G. Deshmukh, - Dreamtech Press.
3. Enterprise wide resource planning: Theory & practice: by Rahul Altekar, PHI
4. Customer Relationship Management, Concepts and cases, Second Edition.

Course Objectives:

CO.No	Course Outcome	Blooms Taxonomy	Explanation
1	To understand the technical aspects and life cycle of ERP systems.	**Comprehension (**explains, gives examples, shows relationship of)	Understanding ERP systems.
2	To understand the steps and activities in ERP.	**Application (**applies, solves , uses, demonstrates)	Facilitating representations for activities flow for ERP system
3	To identify and describe different types of ERP system.	**Knowledge (**defines, describes, recalls , labels, lists, matches, names)	Describing & categorizing /labeling systems.
4	To understand tools and methodology used for designing ERP for an Enterprise.	**Application (**applies, solves , uses, demonstrates)	Using tools for implementing the system

Course Outcomes

After completion of this course, students will be able –

1. To understand the basic structure of ERP.
2. To identify implementation strategy used for ERP.
3. To apply design principles for various business modules in ERP.
4. To apply different emerging technologies for implementation of ERP.
5. To analyze security issues in ERP.
6. To acquire ERP concepts for real world applications.

Mapping of CO and PO&PSO

Relationship of course outcomes with program outcomes:

Indicate 1 (low importance), 2 (Moderate Importance) or 3 (High Importance) in respective mapping cell.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

	(Engg Know)	(Ana)	(De sign)	(inve stiga)	(tools)	(engg Soci)	(Env)	(Eth)	(ind Team)	(comm.)	(PM)	(life Long)
CO1	3											
CO2		3								2		3
CO3		3										
CO4	1	3	3		3							

CO	PSO1	PSO2
CO1	3	
CO2	3	
CO3	3	
CO4	3	3

Justification

PO1: This subject all COs are mapped to PO1 because engineering graduates will be able to apply the knowledge information system to solve business problems

PO2 C0 1 and 2 are mapped to PO2 because students analyze the different scenarios of business to decide the solution for the problem

C0 3 is mapped to PO2 because students are analyze the information flow in the organization.

CSC 4 is mapped to PO2 because student perform review of literature of real world problem to develop business application

PO3: C0 4 is mapped to PO3 because students design an application for domain.

PO5: C0 4 is mapped to PO5 because the students use the tools and open sourced ERP for customization.

PO9 C0 4 is mapped to PO9 because the students work in a team to develop the mini project

PSO1: All COs are mapped to PSO1 because the graduates will be able to apply fundamental knowledge of system design to solve the real world problems.

PSO2: C0 4 is mapped to this PSO2 because students design and implement the solution to meet specific requirement.

CO Assessment Tools:

1: **Direct Methods(80%):** Test 1 + UniExamTh

CO1dm = 0.5T1 + 0.5UTh.

InDirectMethods(20%): Course exit survey

CO1idm

CSDLO6023.1 = 0.8*CO1dm + 0.2* CO1idm

2: **Direct Methods(80%):** Test 2 + UniExamTh

CO2dm = 0.5T2 + 0.5UTh.

InDirectMethods(20%): Course exit survey

CO2idm

CSDLO6023.2 = 0.8*CO2dm + 0.2* CO2idm

3: **Direct Methods(80%):** Test 2 + UniExamTh

CO3dm = 0.5T2 + 0.5UTh.

InDirectMethods(20%): Course exit survey

CO3idm

CSDLO6023.3 = 0.8*CO3dm + 0.2* CO3idm

4: **Direct Methods(80%):** Assignment1 + UniExamTh

CO4dm = 0.5A1 + 0.5UTh.

InDirectMethods(20%): Course exit survey

CO4idm

CSDLO6023.4 = 0.8*CO4dm + 0.2* CO4idm

Course Outcomes Target:

Course Objective	Target Value	Attained Value
1	2.5	
2	2.5	
3	2.5	
4	2.5	

Content beyond Syllabus:

1. Security Architecture

Curriculum Gap: No Curriculum Gap

Mini Project / Laboratory Work:

SR. NO.	EXPERIMENT NAME	CO	PO
1.	Give case study 2/3 student of any organization. Make a report before-after situation at organization (Domain).	2	2, 10, 12
2.	Make a list of Resource of the Selected Domain.	3	2
3	Categorized the Resource as per the function level process and Identify module of the domain.	3	2
4	Explain process of each module of the domain.	3	2
5.	Perform Business process re-engineering (BPR) on selected Module.	4	1, 2, 3, 5
6.	Implement new system based on BPR.	3	1, 3, 4, 9, 10, 11
7.	Perform Impact analysis of the new system as the BPR.	3	1, 2, 3, 5
7.1	Prepare study on JD Edward Tool.	4	1, 3, 4, 9, 10, 11
7.2	Prepare study on Microsoft Dynamics.	4	1, 2, 3, 5
8.0	Download any open source ERP Tool and prepare Installation Guideline and information about the Tool.	1	1
9.0	Make Data Entry in the Software in all modules & generate report		

Rubrics for the Lab Experiments:

Sr. No	Performance Indicator	Excellent	Good	Below Average
1	On time Completion & Submission (01)	01 (On Time)	NA	00 (Not on Time)
2	Logic/Algorithm Complexity analysis(03)	03(Correct)	02(Partial)	01 (Tried)
3	Coding Standards (03): Comments/indention/Naming conventions Output/Test Cases	03(All used)	02 (Partial)	01 (rarely followed)
4	Post Lab Assignment (03)	03(done well)	2 (Partially Correct)	1(submitted)

Rubrics for the Assignments:

Indicator	Average	Good	Excellent
Organization (2)	Readable with some mistakes and structured (1)	Readable with some mistakes and structured (1)	Very well written and structured without any mistakes (2)
Level of content (3)	All major topics are covered, the information is accurate (1)	Most major and some minor criteria are included. Information is accurate (2)	All major and minor criteria are covered and are accurate (3)
Example Association (2)	Basic (1)		Exhaustive(2)
Depth and breadth of discussion and representation (3)	Minor points/information may be missing and representation is minimal (1)	Discussion centers on some of the points and covers them adequately (2)	Information is presented in depth and is accurate (3)

Test 1:

*Q1*Draw the typical business process scenario supporting the ERP systems-- **10 Marks**

[Mapped CO1- Ability to design data models for data warehouse]

Q2.Illustrate with explanation the working of ERP systems--**5 Marks**

[Mapped Course Objective, CO1: Ability to develop the basic understanding of Data Warehouse system]

Q3. Do the activity listing under the roles of ERP in organization.-- ***5MARKS***

[Mapped Course Objective,CO1- Ability to develop a basic understanding of Data Warehouse system.]

Test 2:

Q1 Illustrate with explanation any one business module type among Finance, Manufacturing, Human Resources, Quality Management, MaterialManagement, Marketing, Sales Distribution and Service of ERP system [CO2] **5 Marks**

Q2. What are the key elements of supply chain management in ERP system? State its benefit? [CO2] **5 Marks**

Q3. Apply K-means clustering process to cluster the set, {2, 25, 10, 15, 5, 20, 4, 40} with K=2 Explain Business process re-engineering (BPR) methodology with example usedin designing ERP for an Enterprise [CO3] **5 Marks**

Q4. What is ERP in E- Commerce based applications? [CO3] **5 Marks**

Test CO mapping

Test 1

Question No	CO mapping
1	CO1
2	CO1
3	CO1

Test 2

Question No	CO mapping
1	CO2
2	CO2
3	CO3
4	CO3

Assignment 1: Date -20-03-19 / Submission Date 30-03-19

Q1. Do a detailed case study of open sourced ERP Systems

Q2. How the College existing Library System can be redesigned by use of advanced tools. Explain with architecture diagram

Assignment CO mapping

Assignment 1

Question No	CO mapping
1	CO4
2	CO4

Course exit survey:

1. I have understood the technical aspects and life cycle of ERP systems.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2. I have understood the steps and activities in ERP.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3. I have understood different types of ERP system.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4. I have understood tools and methodology used for designing ERP for an Enterprise.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Lesson Plan:

Subject Details:

Course Title: Enterprise Resource Planning	Theory: 4hrs/week Practical : 2 hrs / week (Mini project / Separate)
Examination Scheme:	80 (Theory) + 20 (Internal-Test) = 100 (Total)

Modes of Content Delivery:

i	**Class Room Teaching**	v	**Self Learning Online Resources**	Ix	Industry Visit
ii	**Tutorial**	vi	**Slides**	X	Group Discussion
iii	Remedial Coaching	vii	Simulations/Demonstrations	xi	Seminar
iv	**Lab Experiment**	viii	Expert Lecture	xii	Case Study

Lecture Plan:

Department of Computer Engineering
Academic Term : Jan – May 2019
Subject : ERP Elective -I
Subject Code: CPC801 Semester: VI

Periods (Hours) per week			
Periods (Hours) per week	***Lecture***	***4***	
Evaluation System	***Practical***	- ***In Mini-project Lab(Separate)***	
	Tutorial	***--***	
Evaluation System		***Hours***	***Marks***
	Theory examination	3	80
	Internal Assessment	--	20
	Practical Examination	--	--
	Oral Examination	--	00
	Term work	--	00
	Total	--	100
Time Table	***Day***	***Time***	
	Tuesday	12.00 to 1.00	
	Wednesday	12.00 to 1.00	
	Thursday	12.00 to 1.00	
	Friday	12.00 to 1.00	

Course Content and Lesson plan

Module 1: **Introduction to Enterprise Resource Planning (ERP)**

Week	Lecture No.	Date		Topic	Assessment methods	Books Referred	Teaching Methods
		Planned	Actual				
	1	1/1/19	1/1/19	Information System and Its Components	TEST 1, ASSIGNMENT	T1, R1	PPT
	2	2/1/19	2/1/19	Value Chain Framework	TEST 1, ASSIGNMENT	T1, R1	PPT
	3	3/1	3/1	Organizational Functional Units	TEST 1, ASSIGNMENT	T1, R1	PPT
	4	4/1	4/1	Evolution of ERP Systems	TEST 1, ASSIGNMENT	T1, R1	PPT
	5	8/1	8/1	Role of ERP in Organization	TEST 1, ASSIGNMENT	T1, R1	PPT , Video

	6	9/1	9/1	Role of ERP in Organization	TEST 1, ASSIGNMENT	T1, R1	PPT
	7	10/1	10/1	Three-Tier Architecture of ERP system.	TEST 1, ASSIGNMENT	T1, R1	PPT
	8	11/1	11/1	Three-Tier Architecture of ERP system.	TEST 1, ASSIGNMENT	T1, R1, R2	PPT
ERP and Implementation							
	9	15/1	15/1	ERP implementation and strategy	TEST 1, ASSIGNMENT	T1, R2	PPT
	10	16/1	16/1	ERP implementation and strategy	TEST 1, ASSIGNMENT	T2, R1, R2	PPT
	11	17/1	17/1	Implementation Life cycle	TEST 1, ASSIGNMENT	T2, T1, R2	PPT , Video
	12	18/1	18/1	Implementation Life cycle	TEST 1, ASSIGNMENT	T2, T1, R2	
	13	22/1	22/1	Pre-implementation task	TEST 1, ASSIGNMENT	T2, R1, R2	PPT , Video
	14	22/1	22/1	requirement definition	TEST 1, ASSIGNMENT	T2, R1, R2	PPT
	15	23/1	23/1	implementation Methodology	TEST 1, ASSIGNMENT , QUIZ	T2, R1, R2	Classroom teaching
	16	24/1	23/1	implementation Methodology	TEST 1, ASSIGNMENT , QUIZ	T2, R1, R2	
ERP Business Modules							
	17	25/1	24/1	Finance,	TEST 1, ASSIGNMENT , PRACTICAL	T1, T2, R1, R2	PPT
	18	29/1	25/1	manufacturing	TEST 1, ASSIGNMENT , PRACTICAL	T1, T2, R1, R2	PPT
	19	30/1	29/1	human resources	TEST 1, ASSIGNMENT	T1, T2, R1,	PPT

					, PRACTICAL	R2	
	20	31/1	30/1	quality management, material management	TEST 1, ASSIGNMENT , PRACTICAL	T1, T2, R1, R2	PPT
	21	1/2	1/2	marketing, Sales distribution and service	TEST 1, ASSIGNMENT , PRACTICAL	T1, T2, R1, R2	PPT
	22	5/2	7/2	Case study on Supply Chain management (SCM), Customer	PRESENTATI ON FROM STUDENT	T1, T2, R1, R4	INTERACTI VE
	23	6/2	8/2	Case study on Supply Chain management (SCM), Customer, relationship Management (CRM)	PRESENTATI ON FROM STUDENT	T1, T2, R1, R4	INTERACTI VE
	24	7/2	12/2	Case study on relationship Management (CRM)	PRESENTATI ON FROM STUDENT	T1, T2, R1, R4	INTERACTI VE
Introduction to ERP related Technologies							
	25	8/2	20/2	Business Process Re-engineering (BPR)	TEST 2, ASSIGNMENT , PRACTICAL	T2, T3, R1, R3	Video
	26	12/2	21/2	Data warehousing	TEST 2, ASSIGNMENT , PRACTICAL	T2, T3, R1, R3	PPT
	27	13/2	22/2	Data Mining	TEST 2, ASSIGNMENT , PRACTICAL	T2, T3, R1, R3	PPT
	28	14/2	25/2	On- line Analytical Processing (OLAP)	TEST 2, ASSIGNMENT , PRACTICAL	T2, T3, R1, R3	PPT
	29	15/2	26/2	Product Life Cycle Management (PLM)	TEST 2, ASSIGNMENT , PRACTICAL	T2, T3, R1, R3	PPT
	30	20/2	26/2	Geographical Information Management	TEST 2, ASSIGNMENT , PRACTICAL	T2, T3, R1, R3	PPT

	31	21/2	7/3	RFID, QR Code	TEST 2, ASSIGNMENT , PRACTICAL	T2, T3, R1, R3	PPT, VIDEO
	32	22/2	8/3	Bar, Coding	TEST 2, ASSIGNMENT , PRACTICAL	T2, T3, R1, R3	PPT, VIDEO
	33	26/2	12/3	E-commerce and their application in Enterprise planning	TEST 2, ASSIGNMENT , PRACTICAL, QUIZ	T2, T3, R1, R3	PPT, VIDEO
	34	27/2	13/3	E-commerce and their application in Enterprise planning	TEST 2, ASSIGNMENT , PRACTICAL, QUIZ	T2, T3, R1, R3	PPT, VIDEO
Extended ERP and security issues							
	35	28/2	14/3	Enterprise application Integration (EAI),	TEST 2, ASSIGNMENT , PRACTICAL	T2, T4, R1, R3, R4	Research paper
	36	1/3	14/3	open source ERP, cloud ERP	TEST 2, ASSIGNMENT , PRACTICAL	T2, T4, R1, R3, R4	PPT
	37	5/3	20/3	Managing ERP Securities: Types of ERP security Issues, System Access security,	TEST 2, ASSIGNMENT , PRACTICAL	T2, T4, R1, R3, R4	PPT
	38	6/3	22/3	Managing ERP Securities: Types of ERP security Issues, System Access security,	TEST 2, ASSIGNMENT , PRACTICAL	T2, T4, R1, R3, R4	PPT
	39	7/3	26/3	Data Security and related technology for managing data security	PRESENTATION	T2, T4, R1, R3, R4	Research based paper
	40	8/3	27/3	Data Security and related technology for managing data security			
Cases of ERP for Enterprises							
	41	12/3	29/3	Cases of ERP like MySAP for Business suite implementation at ITC, ERP for Nestle GLOBE	PRACTICAL, PRESENTATION	T2, T4, R1, R3, R4	Interactive

				Project			
	42	13/3	29/3	Cases of ERP like MySAP for Business suite implementation at ITC, ERP for Nestle GLOBE Project	PRACTICAL, PRESENTATION	T2, T4, R1, R3, R4	Interactive
	43	14/3	2/4	Cases of ERP like MySAP for Business suite implementation at ITC, ERP for Nestle GLOBE Project	PRACTICAL, PRESENTATION	T2, T4, R1, R3, R4	Interactive
	44	15/3	3/4	Oracle ERP Implementation at Maruti Suzuki	PRACTICAL, PRESENTATION	T2, T4, R1, R3, R4	Interactive
	45	19/3	4/4	Oracle ERP Implementation at Maruti Suzuki	PRACTICAL, PRESENTATION	T2, T4, R1, R3, R4	Interactive
	46	22/3	5/4	Need of ERP for Small and Medium size enterprises	PRACTICAL, PRESENTATION	T2, T4, R1, R3, R4	Interactive
	47	26/3	6/4	Need of ERP for Small and Medium size enterprises	PRACTICAL, PRESENTATION	T2, T4, R1, R3, R4	Interactive

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2. Rajesh Ray, Enterprise Resource Planning, Text and cases, Tata McGraw Hill.
3. Sandeep Desai, Abhishek Srivastava, ERP to E_2 ERP: A Case study approach, PHI.
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